Mental health and social relations in older rural population

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Objectives. To describe and analyze the influence of social relations in the elderly in the rural setting with depression.

Methods. *Design*: A cross-sectional study. *Sample*: Patients (N=787) over 64 years, non-institutionalized who belong to the Basic Health Zone Substations (Zaragoza), a representative rural area of Aragon. *The following variables were evaluated*: diagnosis of depression, comorbidity, taking antidepressants, sociodemographic variables and use of social resources (OARS questionnaire), instrumental activities of daily living (Lawton-Brody test) and basics daily living activities (Barthel test).

Results. According to multivariate analysis, the risk of suffering depression is higher in women (OR=5.6 CI=3.0-10.5), patients with comorbidity (OR=12.2 CI=5.1-29.2), people who speak by phone with other at least 5 times a week (OR=3.1 CI=1.7-5.5), who have no one to confide in (OR=3.9 CI=1.8-8.5), sometimes feeling alone (OR=2.7 CI=1.0-4.8), they do not see their family as much as they want to (OR=2.1 CI=1.3-4.4) and who are dependent on others for daily living activities (OR= 2.6 CI=1.5-4.6).

Conclusions. These results confirm the findings in other studies and provide clues to guide interventions aimed at improving the quality of life of the elderly.

Key words: Social resources, Depression, Older people, Activities of daily living

Actas Esp Psiquiatr 2012;40(5):239-47

Salud mental y relaciones sociales en población mayor rural

Objetivos. Describir y analizar la influencia de las relaciones sociales en la depresión en personas mayores.

Métodos. *Diseño:* Estudio transversal. *Muestra:* Mayores de 64 años (N=787), incluidos en la Zona Básica de Salud de Casetas (Zaragoza), un entorno rural representativo de Aragón. *Variables evaluadas:* Diagnóstico de depresión, consumo de antidepresivos, variables sociodemográficas y de recursos sociales (cuestionario OARS), así como actividades de la vida diaria instrumentales (test de Lawton-Brody) y básicas (test de Barthel).

Resultados. En el análisis multivariante el riesgo de padecer depresión es mayor entre las mujeres (OR=5,6 IC=3,0-10,5), los que presentan comorbilidad (OR=12,2 IC=5,1-29,2), hablan por teléfono con otras personas 5 o más veces/semana (OR=3,1 IC=1,7-5,5) no tienen a nadie en quien confiar (OR=3,9 IC=1,8-8,5), alguna vez se encuentran solos (OR=2,7 IC=1,0-4,8) no ve a su familia/amigos tanto como le gustaría (OR=2,1 IC=1,3-4,4) y es dependiente para las actividades de la vida diaria (OR=2,6 IC=1,5-4,6).

Conclusiones. Estos resultados confirman los hallazgos obtenidos en otros estudios y proporcionan claves para orientar las intervenciones dirigidas a mejorar la calidad de vida de los mayores.

Palabras clave: Recursos sociales, Depresión, Mayores, Actividades de la vida diaria

INTRODUCTION

Progressive aging of the population is one of the most characteristic demographic phenomena of recent decades.[1] The elderly population, by itself, makes up a risk group, although not homogeneous, for depression. The particular presentation of this disease in this group of persons is why it is frequently underdiagnosed and treated, entailing a large number of complications and social consequences.[2] Furthermore, with the passage of the years, a series of changes are produced that are related with aging itself, but also with variables such as state of previous health, age and gender, place of residence, sociocultural level, living habits, vital stressant events (such as being a widow(er), feelings of loneliness and social isolation. The interrelation between these factors positively or negatively affects morbidity, mortality and mental health of the elderly.

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Recently, the approach to social relations and their influence on mental health has obtained increasing interest. Different aspects related with social support in the geriatric population, such as the size and composition of the social network, frequency of social contacts, satisfaction with social support, type of support (emotional versus instrumental), and help given by third parties have been studied.[3-5] In general, it is accepted that social interactions have a positive impact on the mental and physical health of the elderly, but the findings are not conclusive and the studies conducted in our country on the social networks and mental health of the elderly in the rural setting, especially those with depression, are limited.[6-8]

Given the growing prevalence of depression,[9-12] an objective of this study is proposed, that is, to describe and analyze the influence of the social relations and depression in elderly persons within the rural setting, in order to find ways of promoting social interactions between the elderly, which favor good mental health.

METHODOLOGY

Population and sample

A cross-sectional study of subjects over 64 years who are not institutionalized belonging to the Basic Health Area of Casetas (Zaragoza) was performed. This area forms a part of the Health Area 3 of Zaragoza. It includes four municipalities and 11 population entities, all of them rural. This rural area is considered to be representative of the regional community of Aragon because its social economical and demographical conditions are similar to the mean of the Aragon rural center of population. The sample size (N>700) was calculated using statistical methods such as minimum size needed to make with confidence a logistic regression analyses with the variables used.[13]

Inclusion criteria were: being 65 years or older, having the Health Care Card in December 2008 and signing an informed consent to participate in the study. Those persons who could not be found at home on three different occasions during the data collection period and who had more than seven errors on the Pfeiffer questionnaire were excluded from the study.

The target population, according to the health care card, in the cut offs made in December 2008, included 1299 persons. Beginning in December 2009, the personal interview was begun at the homes of those selected, going to the home up to three times if contact had not been made with the study subject. After the losses occurring at different times of the selection, the study included 787 persons (figure 1).

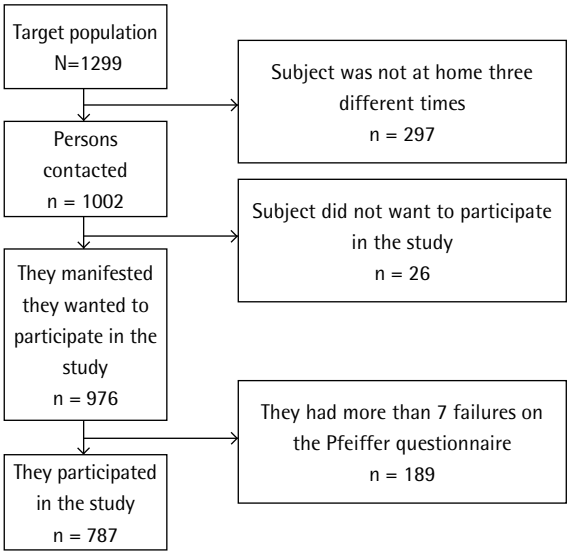

Figure 1 *Flow charge of the selection of the study sample*

DEFINITION OF VARIABLES AND MEASUREMENT INSTRUMENTS

The diagnostic variables of depression, comorbidity, and consumption of antidepressants were obtained from the computerized clinical history, OMI-AP®.[14] In the OMI-AP (electronic medical records-primary care) system, the medical practitioner made the clinical diagnosis and included it in the data bases. The patient was sometimes referred to mental health and the diagnosis could be made by the psychiatrist, but the medical practitioner agreed with this diagnoses and therefore recorded it in the OMI-AP. The depressive episodes included in the study are those that appeared recorded in the data base during the study period. In principle, the only physician of the patients was the patients' medical practitioner, although it was possible to refer the patient to different specialists to confirm a diagnosis.

The social demographic aspects and others related with the social resources were classified by means of the OARS-MAFQ [Older Americans Resources and Services Program-Multidimensional Functional Assessment Questionnaire] questionnaire on its validated and adapted version to Spanish.[15] The questions, belonging to a social club for the elderly or not and the habit of going to the square to meet with their neighbors were added to those of the OARS. The activities of daily living (ADL) were evaluated using the Lawton-Brody test[16] for instrumental activities (IADL), and with the Barthel[17] test for the basic activities (BADL).

Age was recoded into "less than 75 years" and "75 years or older." The level of studies was divided into "primary not finished " and "primary or more." The answers to the question

"who do you usually live with" into "alone," "spouse" and "children/others." Self-perceived health as "good" and "regular/bad." "Comorbidity" into "yes," if the subject suffered two or more chronic diseases and "no" on the contrary.

The variables of social resources: how many people do you know to visit with, how many times do you talk on the phone to someone and how many times with someone with "no one", "up to 4" and "5" times or "more." The question: do you often feel alone in "no," "sometimes,", "yes" when it acts as a predictor variable of the diagnosis of depression and in dichotomic "yes/no" if it is the response variable. The rest of the variables: "do you have any one you can confide in," "do you see your family/friends as much as you want to," "would they help you if you were ill," "do you form a part of any club for the elderly" and "do you go to the square to meet with the neighbors" are dichotomic "yes/no" answers.

Functional capacity for the BADLs was classified according to the score on the Barthel test equal to or less than 45, as "dependent" greater than 45, and greater than 45 "independent". Functional capacity for the IADL into "dependent" and "independent" according to the Lawton-Brody test when equal to or less than 4 or greater than 4.

Statistical Analysis

Using the chi-square statistics, the relation of dependence between the explicative variables and the "endogenous ones of "diagnosis of depression" and "feeling of loneliness." The analysis of Haberman's typified residuals showed which categories of the variables were related.

With the dependent variables mentioned and the independent ones that showed a significant statistical relation in the bivariate analysis, six step-by-step multivariate logistic regression models were constructed, eliminating the variable that was not significant in the Wald test in each step. In three models, the dependent variable was "diagnosis of depression" for all the cases, for those who took antidepressants and for those who did not take them. In the three others, the endogenous variable was "feeling of loneliness," for all the cases, for those with diagnosis of depression and for those who did not have this diagnosis.

To control collinearity, a requirement was that no high correlation would exist between the predictor variables and that the variance inflation factor (VIF) of the model was less than five.[18]

Among the estimators obtained, the following were taken into account: Nagelkerke R2 coefficient and the Odds Ratio with its 95% confidence interval. Significance level was $p<0.05$. The statistical program SPSS 15.0 was used

This study was approved by the Ethics Committee of the Regional Council of Aragon.

RESULTS

Of the 787 patients who were included in the study, 54.9% were women. They were 75 years or older (54.6%). They had not completed primary studies (56.3%). They lived with their spouse (47.1%). They perceived their health as regular/bad (51.1%) and they had comorbidity (66.1%). A total of 58.6% felt alone (often or sometimes) and 123 persons (15.6%) were diagnosed of depression. Of those diagnosed, 65.9% took antidepressants (n=81) and 2.3% of the non-diagnosed (n=15) took them; 58.6% (n=461) felt alone sometimes/frequently. Of the latter, 103 (22.3%) suffered depression.

In the bivariate analysis (Table 1), a significant relation ($p<0.05$) was observed between the diagnosis of depression and being a woman, having a lower educational level, having regular/poor perception of health, presenting comorbidity, knowing up to 4 persons that could be visited, not having anyone to confide in, often feeling alone, not seeing family/friends as often as wanted, feeling that no one would help them if they were ill, not participating in associations or clubs, not going out of the home, having dependence of BADL and the IADL. We did not find a significant association between the diagnosis of depression and the rest of the variables.

As we can see in Table 2, there is a statistically significant relation between feeling alone and being a women, being over 74 years, not having finished primary studies, perceiving health as regular/bad, having comorbidity, not knowing anyone to visit, not having spoken by phone the last week, not having been with people the last week, not having anyone to confide in, being diagnosed of depression, not seeing family/friends as much as wanted, thinking that no one would help if the subject was ill, not belonging to clubs for the elderly, not going to the square to be with the neighbors, and being dependent for the BALD and the IADL

In the multivariate analysis for the group of elderly studied, after eliminating the interactions and variables that do not show statistically significant in successive steps, the risk of suffering depression (Table 3) is greater among women (OR=5.6 CI=3.0-10.5), those who have comorbidity (OR=12.2 CI=5.1-29.2), those who speak with other persons 5 or more times/week (OR=3.1 CI=1.7-5.5), who have no one to confide in (OR=3.9 CI=1.8-8.5), sometimes feel alone (OR=2.5 CI=1.4-4.5), do not see their family or friends as much as they want (OR=2.1 CI=1.3-4.4) and who are dependent for IADL (OR= 2.6 CI=1.5-4.6).

Of the 123 persons diagnosed of depression, 42 (34.1%) were not taking antidepressants. In this group, the risk of suffering depression is greater in women (OR=3.6 CI=1.4-9.1) with unfinished primary studies (OR=2.7 CI=1.0-6.8), who speak by phone 5 or more times/week (OR=4.8 CI=2.0-11.5), sometimes feel alone (OR=4.5 CI=1.6-13.1) and with the perception of not seeing their family/friends as much as they want to (OR=2.8 CI=1.3-5.9)

Table 1 Relation between diagnosis of depression and explanatory variables

	Diagnosis of depression		
	No n (%)	Yes n (%)	p
Gender			
Man	338 (95.2)	17 (4.8)	< 0.0001
Women	326 (75.5)	106 (24.5)	
Age			
< 75 years	309 (86.6)	48 (13.4)	ns
75 years of more	355 (82.6)	75 (17.4)	
Study level			
Primary - not finished	354 (79.9)	89 (20.1)	< 0.0001
Primary or more	310 (90.1)	34 (9.9)	
Who does the subject live with?*			
Alone	95 (74.8)	32 (25.2)	< 0.0001
Spouse	333 (89.8)	38 (10.2)	
Children/Others	236 (81.7)	53 (18.3)	
How does the subject perceive his/her health?			
Good	343 (89.8)	39 (10.2)	< 0.0001
Regular/poor	321 (79.3)	84 (20.7)	
Comorbidity			
No	261 (97.8)	6 (2.2)	< 0.0001
Yes	403 (77.5)	117 (22.5)	
How many persons does the subject know to visit?			
No one	18 (90.0)	2 (10.0)	
Up to 4	392 (81.3)	90 (18.7)	= 0.01
5 or more	254 (89.1)	31 (10.9)	
How many times does the subject speak by phone with someone?	253 (86.1)	41 (13.9)	ns
None	209 (86.0)	34 (14.0)	
Up to 4	202 (80.8)	48 (19.2)	
5 or more			
How many times was the subject with someone in the past week?			
None	34 (75.6)	11 824.49	ns
Up to 4	471 (84.0)	90 (16.0)	
5 or more	159 (87.8)	22 (12.2)	
Does the subject have anyone to confide in?			
No	38 (65.5)	20 (34.5)	< 0.0001
Yes	626 (85.9)	103 (14.1)	
Does the subject often feel alone?			
No	306 (93.9)	20 (6.1)	
Sometimes	296 (77.9)	84 (22.1)	< 0.0001
Yes	62 (76.5)	19 (23.5)	
Does the subject see their family and friends as much as wanted?			
No	158 (76.7)	48 (23.3)	< 0.0001
Yes	506 (87.1)	75 (12.9)	
Would anyone help the subject if the subject were ill?			
No	27 (69.2)	12 (30.8)	= 0.01
Yes	635 (85.1)	111 (14.9)	
Does he/she belong to a club for the elderly?			
Yes	191 (91.0)	19 (9.0)	= 0.002
No	473 (82.0)	104 (18.0)	

Table 1 Continuation

Does he/she go to the square to meet with the neighbors?			
Yes	619 (85.7)	103 (14.3)	< 0.0001
No	45 (69.2)	20 (30.8)	
BADL functional capacity			
Independent	649 (85.2)	113 (14.8)	= 0.001
Dependent	15 (60.0)	10 (40.0)	
IADL functional capacity			
Independent	575 (86.7)	88 (13.3)	< 0.0001
Dependent	89 (71.8)	35 (28.2)	

Table 2 Relation between feeling alone and explanatory variables

	Do you feel alone?		
	No n (%)	Sometimes/Often n (%)	p
Gender			
Man	192 (51.4)	163 (45.9)	< 0.0001
Women	134 (31.0)	298 (69.0)	
Age			
< 75 years	174 (48.7)	183 (51.3)	< 0.0001
75 years of more	152 (35.3)	278 (64.7)	
Study level			
Primary - not finished	147 (32.2)	296 (66.8)	< 0.0001
Primary or more	179 (52.0)	165 (48.0)	
Who does the subject live with?*			
Alone	28 (22.0)	99 (78.0)	< 0.0001
Spouse	182 (49.1)	189 (50.9)	
Children/Others	116 (40.1)	173 (59.9)	
How does the subject perceive his/her health?			
Good	194 (50.8.8)	188 (49.2)	< 0.0001
Regular/poor	132 (32.6)	273 (67.4)	
Comorbidity			
No	143 (53.6)	124 (46.4)	< 0.0001
Yes	183 (35.2)	337 (64.8)	
How many persons does the subject know to visit?			
No one	6 (20.0)	16 (80.0)	
Up to 4	160 (33.2)	322 (66.8)	< 0.0001
5 or more	162 (56.8)	123 (43.2)	
How many times does the subject speak by phone with someone?	92 (31.3)	202 (68.7)	< 0.0001
None	97 (39.9)	146 (60.1)	
Up to 4	137 (54.8)	113 (45.2)	
5 or more			
How many times were you with someone last week?			
None	6 (13.3)	39 (86.7)	< 0.0001
Up to 4	209 (37.3)	352 (62.7)	
5 or more	111 (61.3)	70 (38.7)	
Do you have anyone you can confide in?			
No	17 (29.3)	41 (70.7)	= 0.052
Yes	309 (42.4)	420 (57.6)	

Tabla 2 Continuation

Are you diagnosed of depression?			
No	306 (46.1)	358 (53.9)	< 0.0001
Yes	20 (16.3)	103 (83.7)	
Does the subject see their family and friends as much as wanted?			
No	40 (19.4)	166 (80.6)	< 0.0001
Yes	286 (49.2)	295 (50.8)	
Would anyone help the subject if the subject were ill?			
No	7 (17.9)	32 (82.1)	= 0.002
Yes	319 (42.8)	427 (57.2)	
Does he/she belong to a club for the elderly?			
Yes	126 (60.0)	84 (40.0)	< 0.0001
No	200 (34.7)	377 (65.3)	
Does he/she go to the square to meet with the neighbors?			
Yes	315 (43.6)	407 (56.4)	< 0.0001
No	11 (16.9)	54 (83.1)	
BADL functional capacity			
Independent	323 (42.4)	439 (57.6)	= 0.002
Dependent	3 (12.0)	22 (88.0)	
IADL functional capacity			
Independent	299 (45.1)	364 (54.9)	< 0.0001
Dependent	27 (21.8)	97 (78.2)	

Table 3 Variables that influence depression both for all those surveyed and for those who have or do not have antidepressant treatment

	Total OR(IC95%)	With treatment OR(IC95%)	Without Treatment OR(IC95%)
Gender			
Woman	5.6 (3.0-10.5)		3.6 (1.4-9.1)
Study level			
Primary - not finished			2.7 (1.0-6.8)
Has comorbidity			
Yes	12.2 (5.1-29.3)		
Number of times subject speaks by telephone?*			
Up to 4	1.3 (0.7-2.4)		0.7 (0.3-2.0)
5 or more	3.1 (1.7-5.5)		4.8 (2.0-11.5)
Subject has someone to confide in?			
No	3.9 (1.8-8.5)		
Does subject feel alone?**			
Sometimes	2.5 (1.4-4.5)		4.5 (1.6-13.1)
Often	1.3 (0.6-3.1)		2.8 (0.7-11.9)
Does subject see family/friends as much as he/she wants to?			
No	2.1 (1.3-4.4)		2.8 (1.3-5.9)
Is subject dependent for IADL?			
Yes	2.6 (1.5-4.6)		
Constant	-3.686	1.329	-22.850
Nagelkerke R^2	0.369	0.281	0.379
VIF	1.585	2.204	1.610

* Reference Category: None. **Reference category: Never

Table 4 Variables associated to feeling of loneliness

	Total	WITHOUT diagnosis of depression	WITH diagnosis of depression
	OR (IC95%)	OR (IC95%)	OR (IC95%)
Gender			
woman	2.2 (1.5-3.1)	2.1 (1.4-3.0)	12.3 (3.2-47.4)
Who do you live with?*			
Spouse	0.4 (0.2-0.6)	0.5 (0.3-0.8)	0.3 (0.1-1.0)
Others	0.5 (0.3-0.8)	0.5 (0.3-1.0)	0.3 (0.1-0.8)
How do you perceive your health?			
Regular/poor			7.1 (2.1-23.7)
How many times do you speak on the phone with someone?**			
2-4 times week	1.0 (0.6-1.3)	1.1 (0.7-1.7)	
1 time per day	0.6 (0.4-0.9)	0.5 (0.3-0.8)	
How many times were you with someone last week?**			
Less than 4	0.7 (0.2-1.8)		
4 or more	0.4 (0.1-1.0)		
Do you see family/friends as much as you want to?			
No	4.0 (2.5-6.1)	4.7 (2.8-7.9)	
Do you belong to clubs for the elderly?			
No	1.8 (1.3-2.7)	1.9 (1.3-2.8)	
Do you go to the square to meet with the neighbors?			
No		2.3 (0.9-5.5)	
Is subject dependent for IADL?			
Yes	2.3 (1.1-3.9)		
Constant	2.290	3.347	20.194
Nagelkerke R^2	0.335	0.333	0.555
VIF	1.501	1.499	1.247

*Reference category: Alone. **Reference category: Never.

When making this same analysis among the 81 individuals (65.7%) diagnosed of depression who are receiving treatment, the risk factors disappear (Table 3).

In the following three models (Table 4), the variable to be explained is "do you sometimes/often feel alone." After eliminated the interactions and variables that do not contribute statistical significance in successive steps, the risk of feeling alone is greater among women (OR=2.2 CI=1.5-3.1), those who do not see their family/friends as much as they want to (OR=4.0 CI=2.5-6.1), who do not belong to clubs for the elderly (OR=1.8 CI=1.3-2.7) and who are diagnosed of depression (OR=2.3 CI=1.3-3.9). Factors that act as protectors against feeling alone are: living with the spouse or others (OR=0.4 CI=0.2-0.6 and OR=0.5 CI=0.5-0.8 respectively), having spoken once a day on the telephone (OR=0.6 CI=0.4-0.9) and having made 4 or more visits the previous week OR= 0.4 CI=0.1-1.0).

Of the 461 (58.6%) persons who stated they sometimes/often felt alone, 358 (77.7%) had not been diagnosed of depression. In these, the results obtained are similar to the anterior ones. However, among those with this diagnosis, the only risk factors of feeling alone maintained are being a women (OR=12.3 CI=3.2-47.4) and as a novelty, feeling regular/poor health (OR=7.1 CI=2.1-23.7) (Table 4).

CONCLUSIONS

This is one of the first works that analyzes the subject of depression and social relations in a rural setting. The initiation of depression and its reoccurrence is affected by a wide range of risk factors and protection factors in the different stages of life. One risk factor for the appearance of depression is gender. Many works have concluded that women are those who are the most affected by affective disorders in general, although their difference regarding men decreases with age, in spite of their lower mortality by suicide.[11, 19, 20]

Although it was not aimed to make a comprehensive review of the explanatory hypotheses of the greater prevalence of depression in the woman, some of the reasons offered are longer survival of the woman, social economical gradient between men and women, housework and the continuous responsibility of care of other persons that would contribute to the fact that women have worse mental health and greater need of cares.[21-22] Even so, the specific causes of depression in the woman are not clear.

Both comorbidity and incapacity for IADL were associated in this study to the presence of depressive symptoms. Physical diseases, that suppose a threat for life or chronic diseases, many times associated to functional limitations and pain, above all if there is comorbidity account, may precipitate a depression.[22-24]

The functional state also appears as a risk factor of affective disorders increasingly more relevant in the geriatric population. For Cole and Dendukuri,[25] incapacity explained the depression after two years of follow-up, it being the third factor in force of association after mourning and sleep disorders. Other authors[26] have also corroborated the association between depression in the elderly and incapacity.

In Spain and in other countries, it is estimated that the likelihood of having a mental disorder is greater in the lower social classes.[7, 11, 27] Poverty is related with stress factors such as isolation, uncertainty, frequent negative events and little access to the help resources. In this study, there was greater risk of depression in women having less education and without antidepressant treatment. One possible explanation could be that more education makes it possible to have more material and psychological resources that would favor better treatment compliance and disease control. The fact that speaking more than 4 times/week by telephone has not been manifested as a protector factor of depression could be indicative of an individual strategy to cope with their negative perception and feeling of loneliness but which, however, was not successful in decreasing the risk of developing depression. Furthermore, the evolution of depression among women is worse, recurrences being frequent, and with greater tendency to chronicity than among the males.[21, 28]

The factors of social relation and support are clearly linked in the medical literature to the presence of depressive symptoms and appear as causal and prognostic cofactors in the appearance and remission of depressive symptoms.[29, 30] Social support seems to play an important role in moderating/mediating the impact of the vital stressant events on health in general, finding more elevated rates of mortality among persons with scarce social support.[31, 32] In this study, the greater risk of depression was associated to not seeing family/friends as much as they wanted to, not speaking by phone once a day and not having a person to confide in. The confident availability for the elderly is important since it offers the opportunity to receive emotional support, specific help and advice in case of emergency besides being associated with a decrease of the incidence of depressive symptoms, greater global survival, less risk of cardiac events after an infarction and cardiovascular death in patients with ischemic heart disease.[33]

Feeling of loneliness has appeared in 58% of all the population studied and has been the only variable associated to poor social relations and that has appeared in subjects with and without the diagnosis of depression, although it is only associated to poor perception of health in subjects with depression.[34-36] Recently, Russell and Taylor[37] found that the protector effect of social relations in depression is weaker in the elderly who feel alone independently of the influence of other sociodemographic variables.

The percentage of variance explained in the models, which ranges from 37.9 to 27.1%, as generally occurs when only social factors are included, could be consider adequate. On the other hand, the variance explained is greater in those who do not have treatment. This seems logical because treatment implies more serious depressions, so that the genetic components would surely be greater.

Among the limitations of this study are its cross-sectional design. This design did not make it possible to rule out the existence of causal reversibility, although it must be indicated that the results found agree with those of longitudinal studies that have demonstrated the relation between social support and mental health. Other limitations are the measurement used of feeling of loneliness that has not been standardized and perhaps is not sufficiently specific and sensitive. On the other hand, the diagnosis of depression obtained from the clinical history could be underestimated, since there may be undiagnosed cases and among those that are diagnosed, some may have been discharged. Finally, analysis is still needed, among others, about the influence of individual psychological resources that seem to reduce depressive symptoms such as self-esteem, coping and control.

In summary, at least in rural settings, an association is observed between mental disorders and social network, in the sense that women who have feelings of loneliness, who do not see family/friends as much as they want to and who do not have a confident present greater risk of depression than the others.

This project has been possible thanks to the funding granted by the Department of Science of the Government of Aragón, to the Aging and Dependency Research Group in Aragón (EDA).

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